IN THE CLAIMS:

Please amend claims 1 and 4-12 as follows. Please cancel claim 2 without prejudice or disclaimer. Please add new claims 13-18 as follows.

1. (Currently Amended) A method ~~for maintaining a secure tunnel in a packet-based communication system, the method~~ comprising ~~the steps of~~:

[[-]]establishing a secure tunnel between a security gateway in a second network and a mobile terminal ~~being~~ located at a first address in a first network, wherein the first network is a public packet network and the second network is a private packet network and ~~wherein~~ the security gateway connects the first network to a second network and the mobile terminal has a second address that identifies the mobile terminal in the second network;

[[-]]in the security gateway, identifying the secure tunnel based on the second address in packets destined for the mobile terminal from the second network;

[[-]]detecting a change in the first address of the mobile terminal;

[[-]]in response to the detecting ~~step~~, sending an update message to the security gateway, wherein the update message includes a new address value of the first address; and

[[-]]based on the update message, updating the first address associated with the secure tunnel.

2. (Cancelled).

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3.   (Original) A method according to claim **1**, wherein the update message is a normal data message to be transmitted to the security gateway when the change is detected.

4.   (Currently Amended) A method according to claim **1**, wherein the sending ~~step~~ includes creating a dummy packet and sending it as the update message to the security gateway.

5.   (Currently Amended) A method according to claim **1**, wherein the sending ~~step~~ includes creating an update message including a NAT-D payload ~~for detecting~~ configured to detect a network address translation device between the mobile terminal and the security gateway.

6.   (Currently Amended) ~~A mobile terminal for a packet-based communication system~~ An apparatus, ~~the mobile terminal~~ comprising:

[[-]]tunnel establishment means for establishing a secure tunnel to a security gateway through a packet network; wherein the security gateway is configured to connect a first network to a second network, ~~and~~ the first network being a public packet network and the second network being a private packet network, the security gateway is in the second network and the mobile terminal has a first address that depends on its current

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location in the first network and a second address that identifies the mobile terminal in the second network; and

[[-]]address update means for sending an update message through said secure tunnel to the security gateway when the first address changes, wherein the update message includes a new address value of the first address.

7.   (Currently Amended) ~~A mobile terminal~~ An apparatus according to claim ~~6~~15, wherein the ~~address update means are~~ control unit is configured to create a dummy packet if there is no data to be sent through the secure tunnel when the first address changes.

8.   (Currently Amended) ~~A mobile terminal~~ An apparatus according to claim ~~6~~15, wherein the ~~address update means are~~ control unit is configured to create an update message including a NAT-D payload ~~for detecting~~ configured to detect a network address translation device between the mobile terminal and the security gateway.

9.   (Currently Amended) ~~A security gateway for a packet-based communication system~~ An apparatus, ~~the security gateway~~ comprising:

[[-]]tunnel establishment means for establishing a secure tunnel to a mobile terminal located at a first address in a first network, wherein the security gateway is in a second network and configured to connect the first network to a second network, the first

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network being a public packet network and the second network being a private packet network, and the mobile terminal has a second address that identifies the mobile terminal in the second network;

[[-]]identification means for identifying the secure tunnel based on the second address in a packet originated from the second network and destined for the mobile terminal; and

[[-]]address update means for updating the first address associated with the secure tunnel, the address update means being responsive to a message received from the mobile terminal, the message including a new value of the first address.

10.   (Currently Amended) A system for maintaining a secure tunnel in a packet-based communication system, the system comprising:

[[-]]tunnel establishment means for establishing a secure tunnel between a security gateway in a second network and a mobile terminal being located at a first address in a first network, wherein the first network is a public packet network and the second network is a private packet network, the security gateway is configured to connect the first network to a second network, and the mobile terminal has a second address that identifies the mobile terminal in the second network;

[[-]]detection means for detecting a change in the first address;

[[-]]first address update means, responsive to the detection means, for sending an update message to the security gateway, wherein the update message includes a new address value of the first address;

[[-]]in the security gateway, second address update means for updating the first address associated with the secure tunnel in response to the update message; and

[[-]]in the security gateway, identification means for identifying the secure tunnel based on the second address in a packet originated from the second network and destined for the mobile terminal.

11.   (Currently Amended) A computer useable <u>storage </u>medium having computer readable program code embodied therein to enable a mobile terminal to communicate with a security gateway in a packet-based communication system, the computer readable program code comprising:

[[-]]computer readable program code ~~for causing~~ <u>configured to cause </u>the mobile terminal to establish a secure tunnel to a security gateway through a packet network; wherein the security gateway is configured to connect a first network to a second network<u>, the first network being a public packet network and the second network being a private packet network, the security gateway is in the second network </u>-and the mobile terminal has a first address that depends on its current location in the first network and a second address that identifies the mobile terminal in the second network; and

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[[-]]computer readable program code ~~for causing~~ configured to cause the mobile terminal to send an update message through said secure tunnel to the security gateway when the first address changes, wherein the update message includes a new address value of the first address.

12.   (Currently Amended) A computer useable medium having computer readable program code embodied therein to enable a mobile terminal located at a first address in a first network to communicate with a security gateway in a packet-based communication system, the security gateway being in a second network and configured to connect a first network to a second network, the first network being a public packet network and the second network being a private packet network, and the computer readable program code comprising:

[[-]]computer readable program code ~~for causing~~ configured to cause the mobile terminal to send an update message through a secure tunnel to the security gateway when a first address that depends on the mobile terminal's current location in the first network changes, wherein the update message includes a new address value of the first address.

13.   (New) A method, comprising:

establishing a secure tunnel from a first network to a security gateway in a second network through a packet network; wherein the security gateway is configured to connect a first network to a second network, the first network is a public packet network and the

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second network is a private packet network, -and the mobile terminal has a first address that depends on its current location in the first network and a second address that identifies the mobile terminal in the second network; and

sending an update message through said secure tunnel to the security gateway when the first address changes, wherein the update message includes a new address value of the first address.

14.   (New) A method, comprising:

establishing a secure tunnel from a second network to a mobile terminal located at a first address in a first network, wherein the security gateway is configured to connect the first network to a second network, the first network is a public packet network and the second network is a private packet network, and the mobile terminal has a second address that identifies the mobile terminal in the second network;

identifying the secure tunnel based on the second address in a packet originated from the second network and destined for the mobile terminal; and

updating the first address associated with the secure tunnel, the address update means being responsive to a message received from the mobile terminal, the message including a new value of the first address.

15.   (New) An apparatus, comprising:

a control unit configured to

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establish a secure tunnel from a first network to a security gateway in a second network through a packet network, wherein the security gateway is configured to connect a first network to a second network, the first network is a public packet network and the second network is a private packet network, and the mobile terminal has a first address that depends on its current location in the first network and a second address that identifies the mobile terminal in the second network, and

send an update message through said secure tunnel to the security gateway when the first address changes, wherein the update message includes a new address value of the first address.

16.   (New) An apparatus, comprising:

a control unit configured to

establish a secure tunnel from a second network to a mobile terminal located at a first address in a first network, wherein the security gateway is configured to connect the first network to a second network, the first network is a public packet network and the second network is a private packet network and the mobile terminal has a second address that identifies the mobile terminal in the second network,

identify the secure tunnel based on the second address in a packet originated from the second network and destined for the mobile terminal, and

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update the first address associated with the secure tunnel, being responsive

to a message received from the mobile terminal, the message including a new value of the

first address.

17. (New) The apparatus of claim 16 further comprising a memory unit

configured to store a table mapping the second address with the secure tunnel,

wherein the control unit is further configured to use the table to identify the secure tunnel.

18. (New) The apparatus of claim 16, further comprising a user interface

configured to operate the apparatus.